

WHAT IS CLAIMED IS:

1. A transmission device for a bicycle comprising:
 - a crankshaft;
 - an output shaft rotatably connected to a driving wheel of the bicycle;
 - a driving, rotating member rotationally driven by the crankshaft;
 - a multi-stage, driven, rotating member having a plurality of rotating elements drivingly connected to the output shaft, wherein said driven, rotating member is constantly engaged with and rotated with said output shaft;
 - an endless transmission belt engaged with said driving, rotating member and said driven rotating member;
 - a transmission change-over mechanism for repositioning said endless transmission belt among said plurality of rotating elements; and
 - a one-way clutch for transmitting a rotation of said crankshaft in a normal rotating direction to said driving, rotating member, wherein said one-way clutch is arranged in a power transmission path extending from said crankshaft to said driving rotating member.
2. The transmission device according to claim 1, wherein said driving rotating member and said one-way clutch are arranged coaxially with said crankshaft.
3. The transmission device according to claim 1, further comprising a slide mechanism in said power transmission path enabling said driving, rotating member to be moved in a direction of a rotating central axis of said crankshaft so that the slide mechanism is rotated integrally with said driving, rotating member.
4. The transmission device according to claim 3, wherein said endless transmission belt is engaged with said driving, rotating member and said driven, rotating member in a position parallel with a plane crossing at a right angle with the rotating central axis of said crankshaft.

5. The transmission device according to claim 2, further comprising a slide mechanism in said power transmission path enabling said driving, rotating member to be moved in a direction of a rotating central axis of said crankshaft in so that the slide mechanism is rotated integrally with said driving, rotating member.

6. The transmission device according to claim 5, wherein said endless transmission belt is engaged with said driving, rotating member and said driven, rotating member in a position parallel with a plane crossing at a right angle with the rotating central axis of said crankshaft.

7. The transmission device according to claim 1, wherein the one-way clutch is provided with a pair of ratchet claws, a clutch inner formed by a part of the crankshaft, a clutch outer formed by an inner cylinder and a ring spring held by the clutch inner.

8. A transmission device for a bicycle comprising:
a crankshaft operatively connected with at least one pedal;
an output shaft rotatably connected to a driving wheel of the bicycle and positioned in parallel with said crankshaft;
a driving sprocket rotationally driven by a chain engaged with said crankshaft;
a multi-stage, driven sprocket having a plurality of rotating sprockets drivingly connected to the output shaft by a drive chain, wherein said driven sprocket is constantly engaged with and rotated with said output shaft and said driven chain is engaged with said driving, rotating member and said driven rotating member;
a transmission change-over mechanism for repositioning said driven chain among said plurality of rotating sprockets; and
a one-way clutch for transmitting a rotation of said crankshaft to said driving rotating member during a normal rotating direction, wherein said one-way clutch is arranged in a power transmission path extending from said crankshaft to said driving rotating member.

9. The transmission device according to claim 8, wherein said driving rotating sprocket and said one-way clutch are arranged coaxially with said crankshaft.

10. The transmission device according to claim 8, further comprising:
a slide mechanism in said power transmission path enabling said driving rotating sprocket to be moved in a direction of a rotating central axis of said crankshaft so that the slide mechanism is rotated integrally with said driving rotating sprocket.

11. The transmission device according to claim 8, wherein said drive chain is engaged with said driving rotating member and said driven rotating member in a position parallel with a plane crossing at a right angle with the rotating central axis of said crankshaft.

12. The transmission device according to claim 9, further comprising:
a slide mechanism in said power transmission path enabling said driving rotating sprocket to be moved in a direction of a rotating central axis of said crankshaft so that the slide mechanism is rotated integrally with said driving rotating sprocket.

13. The transmission device according to claim 12, wherein said drive chain is engaged with said driving rotating member and said driven rotating member in a position parallel with a plane crossing at a right angle with the rotating central axis of said crankshaft.

14. The transmission device according to claim 8, wherein the one-way clutch is provided with a pair of ratchet claws, a clutch inner formed by a part of the crankshaft, a clutch outer formed by an inner cylinder and a ring spring held by the clutch inner.

15. The transmission device according to claim 14, wherein the slide mechanism includes

the inner cylinder having a portion forming the clutch outer and rotatably supported coaxially at the crankshaft through a pair of bearings;

an outer cylinder arranged exterior to the inner cylinder and coaxially with the inner cylinder; and

a ball spline mechanism between an outer circumferential surface of the inner cylinder and an inner circumferential surface of the outer cylinder.

16. The transmission device according to claim 15, further comprising a chain guide connected with the driving sprocket to the outer cylinder and integrally connected by bolts.

17. The transmission device according to claim 16, wherein the driving sprocket, chain guide and outer cylinder are integrally rotated and are capable of being moved integrally in a direction of the rotating central axis of the crankshaft.

18. A bicycle comprising the transmission according to claim 1.

19. A bicycle comprising the transmission according to claim 17.